

### **REMARKS/ARGUMENTS**

This Amendment is submitted in response to the Office Action mailed December 30, 2003. At that time claims 1-29 were pending in the application. In the Office Action, the Examiner withdrew from consideration claims 25-29 as being directed to a non-elected invention. The Examiner also rejected claims 1, 2, 4-7 and 9 under 35 U.S.C. §102(b) as being anticipated by the article written by Chen et al. (hereinafter "Chen"). Claims 3, 10, 12-21, 23, and 24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chen in view of U.S. Patent No. 4,892,383 to Klainer et al. (hereinafter "Klainer"). Claim 22 was rejected under 35 U.S.C. §103(a) as being unpatentable over Chen in view of Klainer and further in view of U.S. Patent No. 6,024,923 to Melendez et al. (hereinafter "Melendez"). Claims 8 and 11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chen in view of Melendez.

By this amendment claims 1, 12, 14, 15, and 23 have been amended. References to detection of *neutral* gaseous samples in claims 1 and 12 were deleted as the Examiner did not give the limitation patentable weight. *See* Office Action, page 6. Claims 2-5 and 13 have been cancelled. Accordingly, claims 1, 6-12, and 14-24 are presented for reconsideration by the Examiner.

Applicants would like to thank Examiner Jeffrey R. Snay for conducting a telephonic interview on March 24, 2004 with Applicants' attorney Matthew S. Bethards (Reg. No. 51,466). Rejected claims 1-24 and withdrawn claims 25-29 were discussed, particularly with respect to the limitation of the polymer-surfactant complex disposed as a thin film in claims 13-18, 23, and 24, in light of Chen. Applicants noted that the Examiner appeared to misread Chen in disclosing a polymer-surfactant complex disposed as a thin film. Applicants proposed to amend the independent claims to include the subject matter of claim 13 (the polymer-surfactant complex disposed as a thin film), as Chen does not teach the polymer-surfactant complex as a thin film but instead in an aqueous solution. The Examiner agreed that the proposed amendment appeared to distinguish over Chen. The Examiner indicated that the proposed amendment would be entered and the resulting claims allowed pending Examiner's further review of Chen.

**REJECTION OF CLAIMS 1, 2, 4-7 AND 9 UNDER 35 U.S.C. §102(b)**

The Examiner rejected claims 1, 2, 4-7 and 9 under 35 U.S.C. §102(b) as being anticipated by Chen. *See* Office Action, page 3. As a result of this paper, claims 2 and 4-5 were cancelled. The Applicants respectfully traverse this rejection as applied to the remaining claims.

It is well settled that a claim is anticipated under 35 U.S.C. § 102(b) only if “each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” MPEP §2131, citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “The identical invention must be shown in as complete detail as is contained in the ... claim.” MPEP §2131, citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). As a result of this paper, claims 1, 6-7, and 9 include the limitation that the polymer-surfactant complex is disposed as a thin film. Such a limitation is not taught or disclosed by Chen.

Chen discloses the quenching constant of methyl viologen ( $MV^{2+}$ ) to poly(2,5-methoxypropyloxysulfonate phenylene vinylene) (MPS-PPV) as a function of the concentration of the surfactant dedecyltrimethylammonium bromide (DTA). *See* Figure 3; page 3, third full paragraph. Chen discloses the use of MPS-PPV/DTA in solution. *See e.g.*, page 2, first full paragraph (“Upon adding the cationic detergent DTA...to **an aqueous MPS-PPV solution**...”) (emphasis added); page 1, last paragraph (“MPS-PPV is a **water-soluble** conjugated polymer.”) (emphasis added); *see also* caption to Figure 1 (“The emission spectra of MPS-PPV **in water**...in the presence of  $6 \times 10^{-6}$  M DTA”) (emphasis added).

However, as was mentioned in Applicants’ Amendment dated September 30, 2003, Chen does not teach the use of the of the polymer-surfactant complex disposed as a thin film. *See* Amendment dated Sept. 30, 2003, pages 8-9. As discussed in the specification of the present application:

The fluorescent material 12 may also include films of polymer-surfactant complex formed in a variety of ways to produce fluorescent materials 12 that may be reusable. The polymer-surfactant complex film may be created from the polymer-surfactant complex precipitate formed as the ratio of surfactant molecules per monomer repeat unit of polymer approaches about 1:1. Once the precipitate is recovered, it may be formed into thin films through a variety of methods known in the art, such as casting or coating from an organic solvent.

Page 10, lines 1-7.

Earlier in the specification, it is discussed how, alternatively, the polymer-surfactant complex may be in solution. *See* Application, page 8, line 19 to page 9, line 6. The Application specifically states that “[a] ratio of 1:3 [surfactant molecules per monomer repeat unit] may be preferred when the fluorescent material 12 includes a polymer-surfactant complex **solution**.” Application, page 9, lines 4-6 (emphasis added). Chen teaches a surfactant-polymer ratio as low as 1:100 and as high as 1:3. *See* Chen, page 3, first and second full paragraphs. Since Chen teaches that the surfactant-polymer ratio should not exceed 1:3 for purposes of analyzing  $MV^{2+}$  concentration, the surfactant-polymer complex would necessarily be in solution and could not be “disposed as a thin film” as required by the present claims. In passing Chen mentions in footnote 25 that the complex may form a precipitate, but does not teach that the precipitate may be used as a film or any other way in *detecting*  $MV^{2+}$ . Since the limitation of using a polymer-surfactant complex film is not taught by Chen, Chen does not anticipate claims 1, 6-7 and 9. Withdrawal of this rejection is respectfully requested.

#### **REJECTION OF CLAIMS 3, 10, 12-21, 23 AND 24 UNDER 35 U.S.C. §103(a)**

The Examiner rejected claims 3, 10, 12-21, 23, and 24 under 35 U.S.C. §103(a) as being unpatentable over Chen in view of Klainer. *See* Office Action page 4. As a result of this paper, claims 3 and 13 were cancelled. The Applicants respectfully traverse this rejection as applied to the remaining claims.

According to MPEP §2143.03, to establish a *prima facie* case of obviousness, “all of the claim limitations must be taught or suggested by the prior art.” (citing *In re Royka*, 490 F.2d 981, 180 USPQ 580 (C.C.P.A. 1974)). As a result of this paper, claims 10, 12, 14-21, 23, and 24 include the limitation that the polymer-surfactant complex is disposed as a thin film. This limitation is not taught or disclosed by either Chen or Klainer. As noted above, Chen does not teach the use of the polymer-surfactant complex as a thin film. Klainer, on the other hand, discloses a fiber optic chemical sensor for reservoirs. *See* column 1, lines 6-7. Klainer, like Chen, also does not teach the use of a polymer-surfactant complex as a thin film. Therefore, the

combination of Chen and Klainer does not render these claims *prima facie* obvious under §103(a). Withdrawal of this rejection is respectfully requested.

**REJECTION OF CLAIM 22 UNDER 35 U.S.C §103(a)**

The Examiner rejected claim 22 under 35 U.S.C. §103(a) as being unpatentable over Chen in view of Klainer and further in view of Melendez. *See* Office Action page 5. The Applicants respectfully traverse this rejection.

As noted above, a *prima facie* case of obviousness under §103(a) is not established unless all of the claim limitations are taught or suggested by the prior art. *See* MPEP §2143.03. Claim 22 includes the limitation that the polymer-surfactant complex is disposed as a thin film. As discussed above, this limitation is not taught or disclosed by either Chen or Klainer. As noted by the Examiner, Melendez teaches a remote wireless transmission of a signal from an optical sensor. *See* Office Action page 5. Melendez does not teach a polymer-surfactant complex disposed as a thin film. Melendez's disclosure does not remedy the problems associated with combining Chen and Klainer. Since this limitation is not taught or disclosed by either Chen, Klainer, or Melendez, the combination of Chen, Klainer, and Melendez does not render these claims *prima facie* obvious under §103(a). Withdrawal of this rejection is respectfully requested.

**REJECTION OF CLAIMS 8 AND 11 UNDER 35 U.S.C. §103(a)**

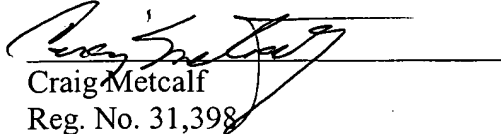
The Examiner rejected claims 8 and 11 under 35 U.S.C. §103(a) as being unpatentable over Chen in view of Melendez. *See* Office Action page 5. The Applicants respectfully traverse this rejection.

*Prima facie* obviousness under §103(a) is not established unless all the claim limitations are taught or suggested by the prior art. *See* MPEP §2143.03. Claims 8 and 11 include the limitation that the device includes a polymer-surfactant complex disposed as a thin film. As noted above, this limitation is not taught or disclosed by either Chen or Melendez. Therefore, the combination of Chen and Melendez does not render these claims *prima facie* obvious under §103(a). Withdrawal of this rejection is respectfully requested.

**CONCLUSION**

Applicant respectfully asserts that claims 1, 6-12, and 14-24 are patentably distinct from the cited references, and requests that a timely Notice of Allowance be issued in this case. If there are any remaining issues preventing allowance of the pending claims that may be clarified by telephone, the Examiner is requested to call the undersigned.

Respectfully submitted,

  
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